

# E85 Dispensing Equipment Update

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# UL Partnering with the DOE

UL, DOE, National Renewable Energy Lab, Oak Ridge National Lab, and the EPA have been working together on E85 since 2006:

- DOE/UL co-hosted E85 Technical Forum
- Created Government / Industry Technical Team
- Conducted simultaneous testing in multiple labs to expedite standards development process
- Developed and Reviewed code proposals
- Collaborating on Outreach and Education for key stakeholders and Public Safety Officials

# Certification Requirements

- Developed to address permitted ethanol blends
- Up to 10% ethanol (E10) – covered by regular gasoline dispenser listing requirements (UL 87)
- (> 10% ethanol) – now covered by UL 87A, which includes unique requirements based on alcohol fuel compatibility research

# Certification Requirements

## **Systems approach applied to testing products:**

- Exposure/performance testing regimen for dispensing equipment
- Metallic and non-metallic components tested
- Static and dynamic testing (for moving parts)
- 2500-hr accelerated life testing (104+ days)
- Test fluid at 60 C (140 F)
- Exposure followed by safety performance tests

# Typical Dispenser

**General Description** --- A typical automotive grade fuel dispenser is actually an assembly of many smaller parts and pieces.

***Comprised of Two Major Sections ...***

- 1) Internal Components** housed in the Main Dispenser Body (sometimes called the hydraulic tree)
- 2) External Hanging Hardware** (hand operated nozzle, emergency break-away connector, rubber hose, etc.).

# Typical Dispenser



# Certification Status

- 1) UL has handled E85 work with high priority
- 2) Sometimes failures occur, and redesign and/or retesting is needed
- 3) No complete E85 dispensers are currently Listed to the new requirements, but some subassemblies have passed tests
- 4) No External Fuel Delivery Hose has been submitted to date
- 5) No Dial-a-Blend style blender pumps have been submitted to date
- 6) Dispenser Listings will be issued as soon as complete products are shown to comply with all applicable requirements



# Certification Timeline

UL has been accepting product submittals since publication of the requirements, but some submittals have occurred only recently

- AUG 2007 – Requirements published for gaskets and seals
- OCT 2007 – Requirements published for dispensing equipment
- NOV 2007 – First submittal received for selected internal components (hydraulic tree)
- MAY 2008 – First submittal received for selected external components (hanging hardware)
- NOV 2008 – **Critical Component Still Awaiting Submittal:  
.....External Fuel Delivery Hose.....**

# For More Information

**DOE/NREL – Clean Cities**

**E85 Dispenser Technology Bulletin:**

**[http://www.afdc.energy.gov/afdc/  
technology\\_bulletin\\_0307.html](http://www.afdc.energy.gov/afdc/technology_bulletin_0307.html)**

**UL Safety Requirements for E85 Dispensers:**

**<http://www.ul.com/gasandoil/development.html>**

